Telecommunication Systems [5XTA0] 2018-2019
FINAL EXAM 14/08/2019

(M3) Inter-Networking

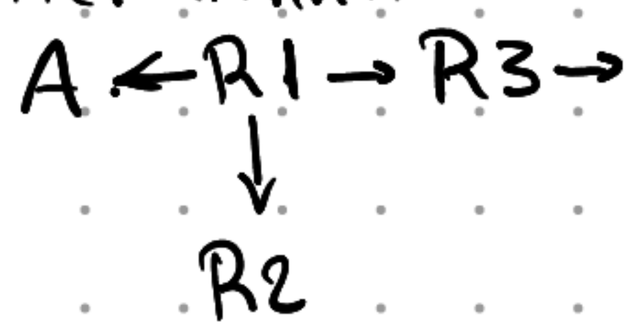
4a/ Rational: DV exchanges msgs regardless the wait of the linrs. Every router sends her own vector, which initially includes her own immediate neighbors. That is already in first exchange from R3→R1, R1 gets to know of R5 but with distance 4.

(i) Answer: 2

(ii) Answer: 1

However, "simultaneously" R4→R3 updates R3 that R3→R5 is possible via R4 with a path distance 2.
Next R3 updates R1 ageun informing R1 of a path of distance 3 via R3.

4b/ After infinite exchanges, the available paths from R1:



	Prefix	Next Hop	Dev/port
A	10.8.4.7		eth2
A	10.8.4.5	10.8.4.5	
R2	64.155.92.61		eth0
R2	64.155.92.62	64.155.92.62	
R2	64.155.50.1	64.155.92.62	
R2	64.155.41.89	64.155.92.62	
	All other IP addresses	64.155.12.106	

NOTE: there is a typo mistake in IP address of C:
- on the figure it is 192.168.87.x
- in the table it is 10.0.8.6

Ignore the 10.0.8.6

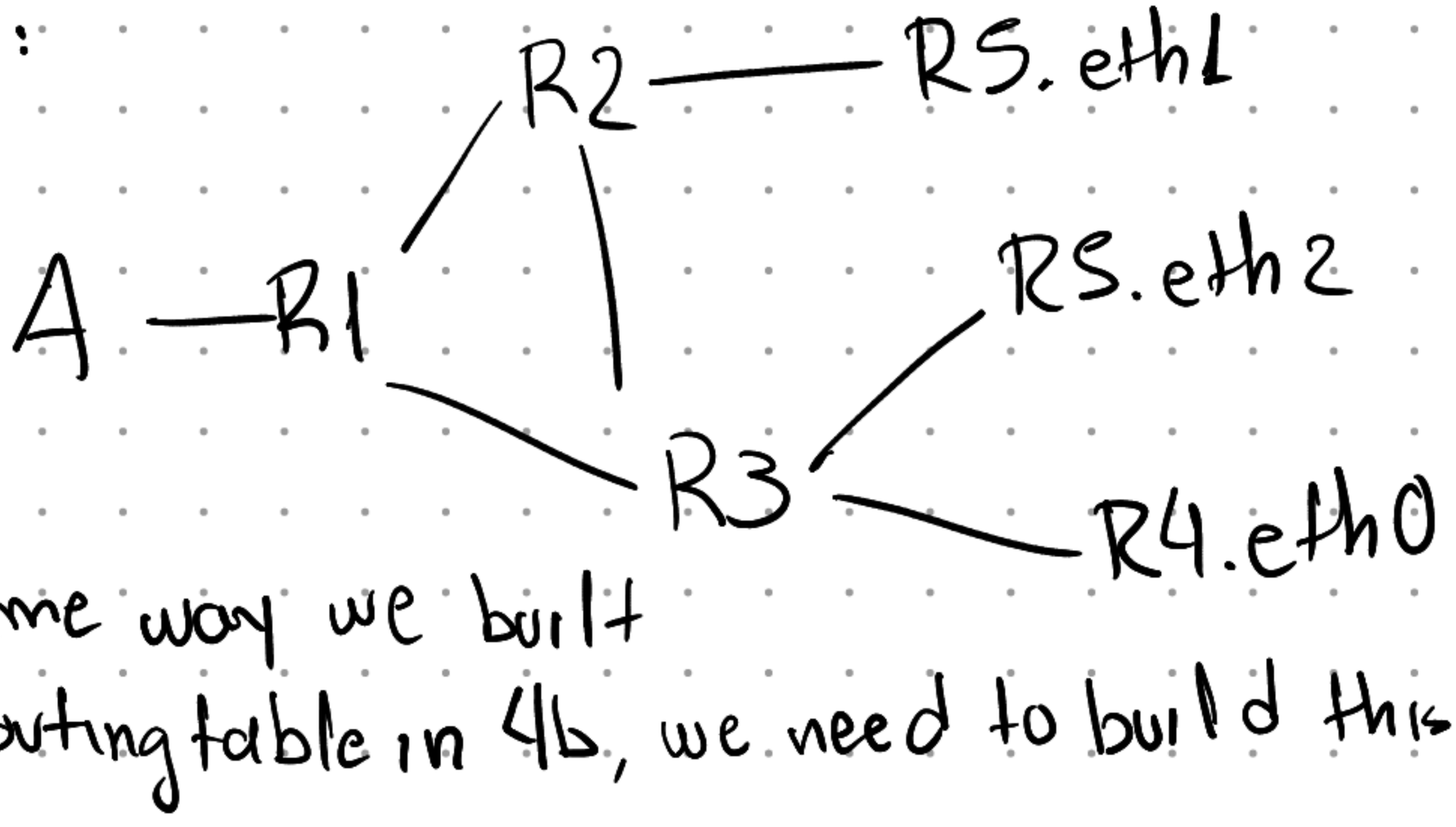
→

4b/

Prefix	Next Hop
10.0.8.4/30	10.0.8.5
64.155.92.60/30	64.155.92.62
64.155.50.1/32	64.155.92.62
64.155.41.89/32	64.155.92.62
0.0.0.0/0	64.155.12.186

4c/ In LSR, the LSPs transfer info for immediate neighbour. No matter how many LSPs are generated, a router will only broadcast immediate neighbours. Hence, if R1 cannot find better path, it means that he does not receive more info from R4 or R5. So, the TTL has to be 1

4d/ In LSR with TTL=1, the visible topology from R1 is:



So, same way we built the routing table in 4b, we need to build this.

4d/

Prefix	Next Hop
10.0.8.4/30	10.0.8.5
64.155.92.60/30	64.155.92.62
64.155.50.1/32	64.155.92.62
64.155.41.88/30	64.155.92.62
0.0.0.0/0	64.155.12.186

← note the difference here compared to 4b